Amendments to the Specification (where added material is shown in underlined type, deleted material is shown in ~~strikeout type~~:)

Please replace paragraph **[00120]** on page 29 with the following amended paragraph:

[00120] The approximate forces acting on actuator plate **210**, and the resulting operation of the combined drive and energy storage mechanisms, will now be illustrated for ideal magnets and spring forces. The total drive and energy storage force, F_{total}, acting on actuator plate **210** is given by the sum of the electromagnetic force of Equation 4 ~~(4)~~ and the springs force of Equation 1 ~~(1)~~ as:

$$F_{total} = F_b + F_S + F_C \quad (6)$$

The first two terms of Equation 6 is a net bias force F_{bias} that is independent of coil current I:

$$F_{bias} = F_b + F_S = [\Phi_B^2 x/2\, \mu_o\, g\, A_{pole}] + [k\,(h - x)] \quad (7)$$

If the spring constant k and electromagnetic drive constants Φ_B' g, and A_{pole} are selected such that:

$$k = \Phi_B^2/2\, \mu_o\, g\, A_{pole}\,, \quad (8)$$

then the net bias force F_{bias} is:

$$F_{bias} = k\,h = h\,\Phi_B^2/2\, \mu_o\, g\, A_{pole}\,, \quad (9)$$

and is thus also independent of the position of actuator plate **210**. The total force F_{total} is:

$$F_{total} = F_{bias} + F_C = h\,\Phi_B^2/2\, \mu_o\, g\, A_{pole} - N\, I\, \Phi_B/2g, \quad (10)$$

The total force is thus independent of the position of actuator plate **210**, and is the sum of a net bias force that is independent of coil current I and a coil force that depends linearly on the coil current I.

Please replace paragraph **[00121]** on page 29 with the following amended paragraph:

[00121] The sum of the bias forces is shown graphically in FIG. 10 as a graph of the bias forces. The spring force F_S resulting from the force of suspension springs **231** on the actuator plate **210**, and the magnetic force, F_b, resulting from of the attraction of armature **407** towards surfaces (stator pole) **413** are selected through Equation 8 ~~(8)~~ to result in position independent bias force. Specifically, the springs **231** and the structure **800** are selected such that the sum of the spring force opposes the magnetic force and such that the sum of the spring force and magnetic force is a force towards chamber **220b** that is a constant bias force approximately independent of the position of armature **210** in frame **209.**

Please replace paragraph **[00144]** on page 37 with the following amended paragraph:

[00144] One position sensor of armature 210 measures the voltage across coils 207, and in particular changes in the voltage resulting from field changes due to armature motion on the drive circuit. Specifically, the drive coil voltage is given by:

$$V = IR + L \cdot dI/dt + kQ \qquad \underline{(11)}\ \cancel{(10)}$$

where I = coil current I, R = coil resistance, L = coil self-inductance L, and Q is the signed pump flow. Typically, kQ term is about 10 mV/(ml/sec), R is about 6 Ω and L = 33 mH. The IR and L·dI/dt terms are compensated by analog circuitry in the electronics. Variation of coil resistance R with temperature and hence with pumping power can be accounted for by including a thermistor to measure coil temperature. The remaining output voltage, representing the kQ term, is integrated. The linearity of this technique is adequate for controlling pump **200**.